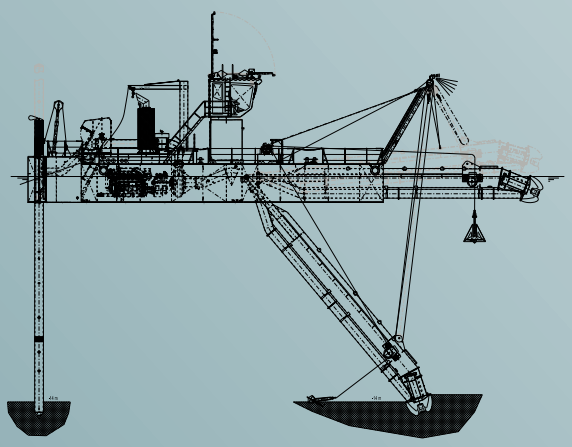
IHC Dredging

Beaver® 50 cutter suction dredger

Rev B 110569933

The Beaver® 50 is reliable, fuel efficient, has low maintenance costs and is extremely productive at all dredging depths. It is equipped with state-of-the-art technology, including the following key features:

- low cost per cubic metre
- an exceptional rate of pumping power – unrivalled in its class
- improved ergonomics and diagnostics
- Cutter Special® pump that combines high efficiency and a large spherical passage to provide a high level of availability
- class certification (BV Coastal area)
- low maintenance and efficient power distribution with a single diesel engine
- environmentally friendly solutions, such as LED lighting
- enhanced safety features, such as a separate pump room.



Reliable and efficient

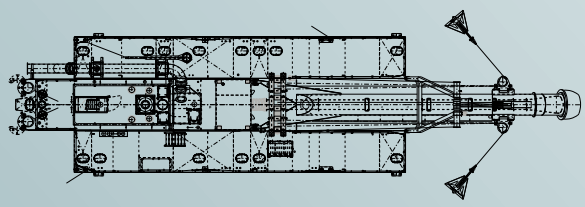
The Beaver® is well known for its robust construction, reliable operation and excellent performance. To date, Royal IHC has supplied more than 800 of these standard cutter suction dredgers worldwide.

Transportable and deliverable from stock

Beaver® dredgers can be dismantled for transport via road, rail or sea. A wide range of optional equipment is available, as well as complementary auxiliary equipment, such as work boats and discharge pipelines. These vessels are mostly delivered from stock

Service and support

Royal IHC can provide a complete package of spare parts, maintenance support, equipment training programmes, dredging advisory services and dredge operators for hands-on instruction and commissioning.



Main parameters

Dredging depth	14.0m
Discharge diameter	500mm
Total power	1,350kW

Dimensions

Length overall (ladder raised), approx.	33.0m
Length over pontoons	22.65m
Breadth	7.87m
Depth	2.44m
Side pontoons	19.25 x 2.40 x 2.44m
Average draught (50% consumables)	1.5m (approx.)
Maximum design draught	1.65m
Maximum standard dredging depth	14.0m
Suction pipe diameter	550mm
Discharge pipe diameter	500mm
Total installed power	1,350kW

Swing width with 35° swing each side

At maximum dredging depth	29.5m
At minimum dredging depth	36.5m

Dredge pump

Type	IHC HRCS2 1200-250-500, single-walled
Engine type	Caterpillar 3512C HD SCAC
Continuous engine power	1,350kW @ 1,600rpm
Specific fuel consumption	199.5g/kWhr
Ball passage	250mm

Electrical installation

Voltage	24V DC
Battery capacity	660Ah
Voltage (50Hz)	230V AC
Power (50Hz)	8kW

Cutter

Type	IHC 10-CB-AL-1455-180-V04
Power at shaft	170kW
Diameter	1,455mm
Maximum speed, approx.	30rpm

Ladder and Swing winches

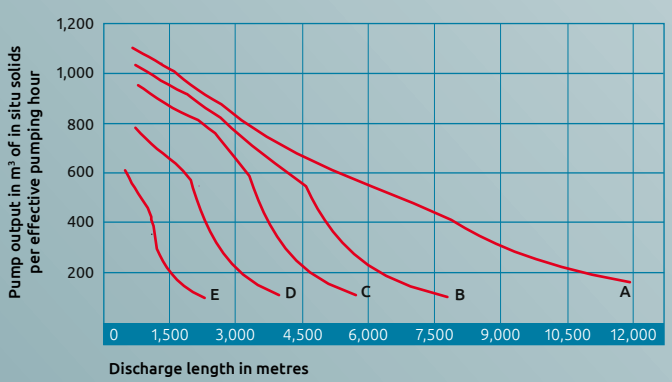
Line pull, first layer	90kN
Maximum line speed	20m/min
Wire diameter	22mm
Drum diameter	457mm
Swing wires length	100m
Anchor weight	500kg

Spuds

Length	19.0m
Diameter	559mm
Weight	5,570kg

Pump output

Discharge pipe diameter = 500mm
Dredging depth = 14.0m
Maximum volumetric concentration of in situ solids of 25%
Final elevation at end of discharge pipe = 4.0m



Spud hoisting cylinders

Force	244kN
Spud stroke (each time), approx.	3.3m

Deck crane

Lifting power	30kN
Outreach	3.25m

Classification

Bureau Veritas Class I, ✠ Hull • MACH Dredger - no propulsion
Coastal area

Other features

- standard design, allowing for short delivery times and competitive pricing
- spare parts available from stock
- durable heavy-duty marine engine compliant with IMO Tier II
- efficient fuel consumption
- fresh-water engine cooling system
- dredge pump driven through integrated bearing block, clutch and reduction gearbox
- white iron-wear parts for the dredge pump
- separate pump room to prevent the engine room from flooding
- cutter drive accepts temporary overload, resulting in high maximum cutter power
- reliable hydraulic system
- completely assembled and fully tested afloat before delivery
- dismountable and transportable by road, rail or sea
- ready for operation on arrival at site
- one-man operation
- on-board toilet
- wide range of services and auxiliary equipment available (including work boats, boosters and pipelines)
- air conditioning
- access to operations monitoring module (3 years with option to extend).

Optional extras

- beaverkit
- spud-carriage installation
- anchor booms
- increased dredging depth
- swivel bend
- discharge valve and vacuum-relief valve
- life-cycle support packages (incl. training, technical support etc.)
- production measurement, automation and positioning system
- optional packages: comfort, HSE (health, safety and environment), nautical and inventory plus.
- harbor generator set
- accommodation.

Output calculated for:

Soil type	Decisive grain size	Situ density
A Fine sand	100µm	1,900kg/m³
B Medium sand	235µm	1,950kg/m³
C Coarse sand	440µm	2,000kg/m³
D Coarse sand and gravel	1.3mm	2,100kg/m³
E Gravel	7mm	2,200kg/m³

Note

Calculated output curves only indicate pumping capacity, based on the maximum available power on the pump shaft and free-flowing material. In actual practice, properties may vary from free-flowing, easily excavated to compacted, hard-to-excavate material. When used for estimation actual outputs, the nature of the material to be dredged and local job conditions must be considered. Please consult Royal IHC for dredging conditions outside these curves.

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